Letter to the Editor

Co-Infection or Co-Colonization With Vancomycin-Resistant Enterococci and Methicillin-Resistant *Staphylococcus aureus* in a Network of Community Hospitals

To the Editor:

The isolation of both methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococcus (VRE) from individual patients is ominous in light of the documented transfer of the *van*A gene encoding vancomycin resistance from VRE to *S. aureus*.[1] The article by Warren et al.[2] in the February issue of *Infection Control and Hospital Epidemiology* described the epidemiology of this important phenomenon of co-colonization or co-infection with MRSA and VRE. Using universal surveillance for VRE colonization and clinical cultures for MRSA, the authors showed that at least 9.5% of patients in a medical intensive care unit (ICU) of Barnes–Jewish Hospital, an urban 1,400-bed, tertiary-care hospital, were co-colonized or co-infected with MRSA and VRE. This disturbingly high frequency is almost certainly replicated in ICUs of tertiary-care hospitals throughout the United States.

The Department of Health and Human Services reported that, in 2000, 89% of all inpatient hospital-days occurred in hospitals with fewer than 500 beds.[3] Although smaller community hospitals generally have a lower burden of resistant organisms, they are also potential reservoirs for co-infection and co-colonization. The Duke Infection Control Outreach Network (DICON) is a collaboration of 25 predominantly rural community hospitals ranging in size from 30 to 537 beds in North and South Carolina, Virginia, Georgia, and Taiwan. DICON tracks all positive cultures for resistant organisms in network hospitals for the purposes of analysis, feedback, and intervention to control the spread of these organisms. Surveillance methods for colonization by resistant organisms are individualized by hospital, and active surveillance is performed only in a few selected high-prevalence units.

For the 14 DICON hospitals in the southeastern United States contributing to the DICON resistant organism database from January 1, 2000, to December 31, 2003, there were 1,623,425 total patient-days, including both ICU-days and hospital ward–days. During this time, there were 5,425 hospital admissions (3,387 unique patients) with MRSA but not VRE; 554 hospital admissions (251 unique patients) with VRE but not MRSA; and 19 hospital admissions (10 unique patients) with co-colonization or co-infection with MRSA and VRE. During only 3 of these 19 hospital admissions was the patient admitted to an ICU. Of patients colonized with MRSA, 0.29% were co-colonized or co-infected with VRE. Of patients colonized or infected with VRE, 3.8% were co-colonized or co-infected with MRSA.

These data show that co-occurrence of MRSA and VRE in individual patients is not limited to large, urban, tertiary-care hospitals, and suggest that the problem extends beyond the walls of the ICU. Although the density of co-occurrence is much lower in this predominantly rural, community hospital population than in the study by Warren et al.,[2] the volume of care delivered in such settings makes the cumulative burden significant. MRSA is an emerging and rapidly spreading organism in community hospitals.[4] If VRE spreads throughout community hospitals in a similar manner as MRSA, the population of co-colonized or co-infected patients will increase substantially, increasing the risk of development of vancomycin-resistant *S. aureus*. Future study is warranted to further describe and understand the epidemiology, transmission, and control of resistant organisms in community hospitals.

REFERENCES

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